REMARKS

Status Summary

In this Amendment, no claims are canceled and claims 64-69 are added. Therefore, upon entry of this Amendment, claims 1-36, 39-49, and 52-69 will be pending.

Claim Rejections 35 U.S.C. § 102

Claims 1, 13, 14, 25-27, 34-36, 39, 40, 45-49, and 56 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,101,687 to <u>Granberg</u> (hereinafter, "<u>Granberg</u>"). This rejection is respectfully traversed.

The present invention, for example as claimed in independent claims 1, 14, 26, 34, 45, and 57, relates to methods and systems for screening and correlating mobile call signaling messages that relate to a change in location of a mobile subscriber at a telecommunications network element. Each of the independent claims has been amended to clarify that the mobile call signaling messages received by the telecommunications network element are screened to identify messages that relate to changes in location of mobile subscribers. The screened mobile call signaling messages are then correlated to identify mobile call signaling messages in a dialogue between an HLR and a VLR relating to a change in location of a particular mobile subscriber. A change in location indication message is then generated and sent to the short message service center for the particular mobile subscriber. The steps are performed automatically in response to a change in location of the particular mobile subscriber.

There is absolutely no disclosure in Granberg of screening mobile call signaling messages relating to mobile subscriber location changes, correlating the messages to identify messages in a dialogue between an HLR and a VLR relating to a change in location of a particular subscriber, or sending an SMS message to the particular subscriber. Granberg is directed to a method for storing subscriber records in an HLR so that the subscriber can receive network-specific services when the subscriber is roaming. For example, Granberg states:

> In operation, when the HLR receives a location update request or initiates a stand-alone message to insert subscriber data (due to data being inserted or modified in the HLR), the HLR checks whether the network specific indicator is set for that particular subscriber. If so the network specific service information stored for the particular subscriber in the HLR is sent to the MSC where the subscriber is registered or is in the process of being registered. Since the network specific service information for that particular subscriber is stored in the VLR of the serving MSC, the CAMEL service indicated by that information will be invoked for calls involving that subscriber in the network. (See column 8, lines 11-22 of Granberg.)

The above-referenced passage indicates that Granberg relates to operations performed by an HLR to notify a VLR of services to which a subscriber has subscribed. There is absolutely no teaching or suggestion of screening mobile call signaling messages that relates to changes in location of mobile subscribers or correlating mobile call signaling messages to identify messages in a dialogue between the HLR and the VLR that relate to a change in location of a particular mobile subscriber. In Granberg, the HLR simply looks up subscription data in its database without performing message screening or correlation. Thus, for this reason alone, the rejection of the claims as anticipated by Granberg should be withdrawn.

In addition, <u>Granberg</u> does not remotely teach or suggest automatically sending an SMS message to a subscriber in response to a change in location of the particular mobile subscriber. The only network specific service disclosed by <u>Granberg</u> is short number voice mail service whereby a subscriber dials a shortened code to access voice mail. Accessing voice mail is distinct from delivering SMS messages, which are text messages delivered to a subscriber's handset. Thus, for this additional reason, the rejection of the claims as anticipated by <u>Granberg</u> should be withdrawn.

Moreover, with regard to independent claim 1, page 3 of the Official Action indicates that the summary of the invention, column 5, line 42 through column 6, line 17, and column 6, lines 49-64 of <u>Granberg</u> disclose steps (d)-(g) of claim 1. Steps (d)-(g) of claim 1 relate to generating a change in location indication message, sending the message to an SMSC, generating SMS message, and sending the SMS message to the mobile subscriber automatically in response to a change in location of the subscriber. Applicants respectfully disagree with the contention that <u>Granberg</u> discloses these steps. In the Summary of the Invention of <u>Granberg</u>, the only supplementary services discussed are intelligent network (IN) and customized applications for mobile network enhanced logic (CAMEL) services. In contrast to the automatic delivery of the SMS delivery present invention, IN and CAMEL services require end offices triggers and SCP queries. For example, <u>Granberg</u> states:

> For example, a service control point (SCP) node stores and implements service logic invoked to provide supplementary services. A service switching point (SSP) handles service detection and switching functions necessary to invoke services at the SCP. (See column 2, lines 48-53 of <u>Granberg</u>.)

In this passage, Granberg discusses IN- and CAMEL-based services are provided to roaming subscribers. Such services require end office triggers and SCP database queries. In contrast to the trigger- and query-based services disclosed in Granberg, the present invention relates to automatically generating and sending SMS messages in response to a change in location of a subscriber. Thus, because the Summary of the Invention mentions IN- and CAMEL-based services, which require end office triggers and database queries, the Summary of the Invention section of Granberg teaches away from the claimed invention.

Column 5, line 42 through column 6, line 17 of Granberg, which was cited in the Official Action, relates to standard operations of a mobile communications network when a subscriber roams to a new location area. For example, Granberg states:

> Typically, when a mobile station enters into a visiting location or service area, the corresponding VLR requests and receives data about the roaming mobile station from the mobile's home location register (HLR) **16** and stores it. As a result, when the mobile station makes a call, the VLR already has the information needed for a call set up. (See column 5, lines 61-66 of Granberg.)

In this passage from column 5, Granberg indicates that a VLR requests information from a subscriber's HLR when the subscriber roams into the VLR's network. Such operation is standard in mobile communications networks and does not teach or suggest automatic SMS message generation as claimed.

Column 6, lines 1-17 of Granberg, which was cited in the Official Action, describes the HLR as storing the IMSI, MSISDN, and services to which the subscriber subscribes. The only service other than call setup that is described in Granberg is short

code voice mail access. There is absolutely no teaching or suggestion anywhere in this passage of any processing that relates to automatically sending an SMS message to the subscriber in response to a change in location of the subscriber.

Column 6, lines 49-64 of Granberg, which was cited in the Official Action, likewise fails to teach anything regarding SMS processing. The cited portion of Granberg illustrates how the various entities in a GSM network communicate in order to provide CAMEL services. For example, Granberg states:

> The HLR **42** communicates with the GMSC **44** and the GSMscf **48** following a mobile application part (MAP) protocol. The GSMssf **46** and the GSMscf **48** communicate using a CAMEL application part (CAP) protocol. (See column 6, lines 56-60 of Granberg.)

In this passage, "ssf" indicates a service switching or end office function, and "scf" indicates a service control or SCP function. Communication between the ssf and the scf for CAMEL services requires an end office or ssf trigger and an SCP or scf query. Requiring end office triggers and SCP database queries increases network signaling traffic and call setup time. As stated above, the present invention is distinct from such trigger- and query-based services because SMS message generation is automatic. In addition, the fact that Granberg specifies that the HLR communicates with the GMSC using the MAP protocol is irrelevant to the patentability of the claimed invention. The MAP protocol is commonly used in mobile communications networks for communications between network entities. Nothing in column 6, lines 49-64 of Granberg teaches or suggests correlating MAP messages that relate to a change in location of a subscriber or automatically generating SMS messages. Thus, for these

additional reasons, the rejection of the claims as anticipated by Granberg should be withdrawn.

Claim Rejections 35 U.S.C. § 103

Claims 2-4, 15-17, 57, and 60-63 were rejected under 35 U.S.C. § 103(a) as unpatentable over Granberg in view of European Patent Application No. 0 710 043 A1 to Brown (hereinafter, "Brown"). This rejection is respectfully traversed.

As stated above, Granberg fails to teach or even remotely suggest a method or a system for screening mobile call signaling messages that relate to changes in location of mobile subscribers or correlating mobile call signaling messages to identify messages in a dialogue between an HLR and a VLR relating to a change in location of a particular subscriber. In addition, Granberg fails to teach automatically generating an SMS message in response to a change in location of a particular mobile subscriber. Brown likewise fails to teach or suggest such an invention. For example, rather than correlating messages relating to a change in location of a particular subscriber, Brown relates only to detecting location update messages from a plurality of different subscribers and collecting those messages to determine topology information for a network. (See column 2, lines 1-24 of Brown.) Because Brown fails to teach or suggest correlating messages to identify messages in a dialogue between an HLR and a VLR that relates to a change in location of a particular subscriber, the rejection of the claims as unpatentable over Granberg in view of Brown should be withdrawn.

In addition, Brown teaches that monitoring of location update messages that are performed by a computer 42, which is external to the mobile communications network.

Because <u>Brown</u> teaches monitoring location update messages at a stand-alone computing platform external to the telecommunications network, <u>Brown</u> fails to teach performing the steps of the present invention at a telecommunications network element. Thus, for this additional reason, the rejection of the claims as unpatentable over <u>Granberg</u> in view of <u>Brown</u> should be withdrawn.

Moreover, the main purpose of the system illustrated in <u>Brown</u> is to identify new location areas not previously identified. (See column 10, lines 55-60 of <u>Brown</u>.) There is no disclosure using the processing steps in <u>Brown</u> to generate a change in location indication message or deliver an SMS message to a subscriber. Thus, for this additional reason, it is respectfully submitted that the rejection of the claims as unpatentable over <u>Granberg</u> in view of <u>Brown</u> should be withdrawn.

With regard to claims 60-63, like the previous Official Action, on page 5, the current Official Action indicates that <u>Brown</u> teaches the invention of claim 60-63. Applicants again disagree with this assertion. Claims 60-63 relate to performing message screening and correlation at a signal transfer point. As indicated in our response to the previous Official Action, the cited portion of <u>Brown</u> does not even mention an STP. Thus, for this additional reason, it is respectfully submitted that the rejection of claims 60-63 should be withdrawn.

Claims 5-9, 11, 12, 18-22, 24, 25, 32, 41-44, and 53-58 were rejected as unpatentable over <u>Granberg</u> in view of U.S. Patent No. 6,505,046 to <u>Baker</u> (hereinafter, "<u>Baker</u>"). This rejection is respectfully traversed.

As stated above, <u>Granberg</u> fails to teach or even remotely suggest the claimed invention of, at a telecommunications network element, screening mobile call signaling

messages that relate to changes in locations of mobile subscribers, correlating those messages to identify messages in a dialogue that relates to a change in location of a particular mobile subscriber, or automatically sending an SMS message to the particular mobile subscriber. <u>Baker</u> likewise lacks such teaching or suggestion. As stated in our response to the previous Official Action, <u>Baker</u> requires a subscriber to dial a special phone number in order to receive messages from WSN **301**. For example, <u>Baker</u> states:

> In cellular or mobility networks of the present invention, the distribution process is triggered when subscribers visit a retail location and dial a predefined, advertised number using a radio telephone. (See column 2, lines 19-23 of <u>Baker</u>.)

Thus, from this passage, rather than teaching a system that automatically generates a change in location indication message, <u>Baker</u> teaches the system that requires a subscriber to dial a telephone number in order to receive advertisements. Thus, because <u>Granberg</u> and <u>Baker</u> fail to teach the invention as claimed, it is respectfully submitted that this rejection should now be withdrawn.

Claims 10, 23, and 28-31 were rejected as unpatentable over <u>Granberg</u> in view of German Patent Application No. DE 198 05 261 A 1 to <u>Jung</u> (hereinafter, "<u>Jung</u>"). This rejection is respectfully traversed.

As stated above, <u>Granberg</u> fails to teach the claimed invention of, at a telecommunications network element, screening call signaling messages that relate to changes in locations of mobile subscribers, correlating the call signaling messages to identify messages relating to a change in location of a particular mobile subscriber, or

generating a change in location indication message or an SMS message automatically in response to the correlation. As stated in Applicants' response to the previous Official Action, Jung explicitly states that messages are not received at a telecommunications network element. For example, on page 3 of the English translation of Jung, the following is stated:

> No changes in the telecommunications network elements (VLR, HLR, MSC are necessary).

Jung teaches that messages are received at a protocol monitors **18** and **19** illustrated in Figure 2 of Jung. Thus, because Jung teaches performing the processing steps disclosed therein at protocol monitors, rather than at a telecommunications network elements, for this reason alone, the rejection should be withdrawn.

Moreover, Jung does not teach or suggest screening or correlating call signaling messages. In contrast, the screening selected messages, Jung states on page 4 of the English translation:

> Protocol recording devices **18** and **19** are used to monitor all transactions from the mobile telecommunications network to the international telecommunications network **17** having CCS **7** signaling.

Thus, rather than teaching correlating and screening, Jung teaches that all messages are received by protocol monitors **18** and **19**. Capturing all messages results in an increased processing load on downstream elements. In contrast, the telecommunications network element in the independent claims of the present application automatically screen selected messages that relate to changes in locations

of mobile subscribers and correlates messages that relate to a change in location of a particular mobile subscriber. Thus, for these reasons, the rejection of the claims as unpatentable over <u>Granberg</u> in view of <u>Jung</u> should now be withdrawn.

Claims 57-59 were rejected were rejected as unpatentable over <u>Granberg</u> in view of <u>Baker</u> and further in view of <u>Brown</u>. This rejection is respectfully traversed.

As stated above, <u>Granberg</u>, <u>Baker</u>, and <u>Brown</u> fail to teach the invention of, at a telecommunications network element, screening messages that relate to changes in location of mobile subscribers. In addition, these references fail to teach or suggest a message processing platform that correlates the MAP messages to identify messages in a dialogue between an HLR and a VLR that relates to a change in location of a particular mobile subscriber. As stated above, <u>Granberg</u> is directed to operations performed by an HLR to notify a VLR of services to which a subscriber subscribes when the subscriber roams into a new network. Such operations include performing a lookup in the HLR to identify the subscribed-to services. There is no teaching or suggestion of message screening or correlation.

<u>Brown</u> is directed to identifying MAP update location messages that identify new areas in the network. There is no teaching or suggestion of the individual correlation that is now specifically claimed in claim 57. Rather than correlating messages that relate to a change in location of a particular mobile subscriber, <u>Brown</u> teaches that update location messages from all subscribers are collected and no correlation is performed. <u>Baker</u> is not directed to automatic SMS message generation. Rather, <u>Baker</u> requires that a subscriber manually enter a code in order to receive SMS

messages. Thus, for these reasons, the rejection of claims 57-59 as unpatentable over Granberg, in view of Baker, in view of Brown should now be withdrawn.

Claim 33 was rejected as unpatentable over Granberg in view of Brown. This rejection is respectfully traversed.

Claim 33 depends from claim 26. As stated above, neither Baker nor Brown teaches the claimed invention of, at a telecommunications network element, screening call signaling messages relating to changes in location of mobile subscribers, correlating messages to identify messages in a dialogue between an HLR and a VLR relating to the change in location of a particular subscriber, or automatically generating mobile call location update records for the particular subscriber, as claimed in claim 26. Granberg is directed to steps performed by an HLR to deliver network specific services to roaming subscribers. There is no screening or message correlation performed by the HLR. Rather, the HLR simply performs a lookup in its database to identify the subscribed-to services. Brown is directed to screening location update messages to identify network topology changes. There is no teaching or suggestion of the individualized processing claimed in claim 26. Thus, the rejection of claim 33 should now be withdrawn.

New Claims

New claims 64-69 are added. Support for claims 64-69 is found, for example, on page 20, line 17 through page 21, line 11 of the present specification.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and such action is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.
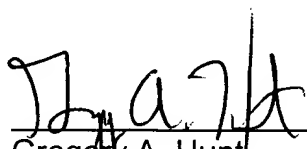
DEPOSIT ACCOUNT

The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. **50-0426**.

Respectfully submitted,

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